

4/17/18 "Too many of us are not living our dreams because we are living our fears."-Les Brown

HW:

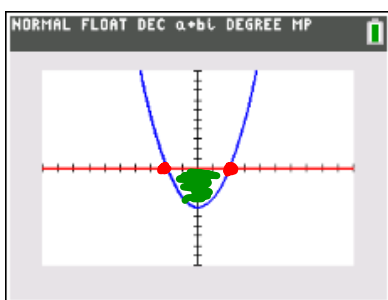
AIM: How do we find area between two functions?

Warm Up:

Challenge: Can you figure out the method today?

1. Find the area between

$$y = x^2 - 4 \text{ and the } x\text{-axis.}$$



Find the x-intercepts

$$\begin{aligned} 0 &= x^2 - 4 \\ (x+2)(x-2) \\ x &= -2 \quad x = 2 \end{aligned}$$

$$\text{Area} = \int_{-2}^2 (x^2 - 4) dx$$

$$\text{Area} = \boxed{\frac{32}{3} \text{ units}^2}$$

NORMAL FLOAT DEC a+bi DEGREE MP

$$\int_{-2}^2 (x^2 - 4) dx$$

-10.66666667

Ans → Frac

$-\frac{32}{3}$

negative?

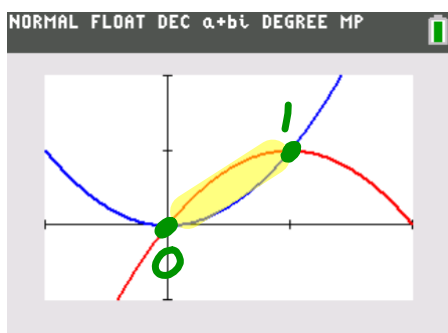


$$\text{Area} = \int_a^b (\text{Top function} - \text{Bottom function}) dx$$

"a" and "b" are the x-values of the points of intersection.

2. What is the area bound by

$y = x^2$  and  $y = 2x - x^2$   
 Bottom Top



$$\text{Area} = \int_0^1 (2x - x^2 - (x^2)) dx$$

$\frac{1}{3} \text{ units}^2$

NORMAL FLOAT DEC a+bi DEGREE MP

$$\int_0^1 (2x - x^2 - (x^2)) dx$$

Ans ▸ Frac .3333333333

$\frac{1}{3}$